

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION

OF: BREINER ET AL.

SERIAL No. 09/646,183

FILED: SEPTEMBER 14, 2000

Box:

RCE

CONFIRMATION No.: 5543

GROUP ART UNIT: 1714

EXAMINER:

PETER A. SZEKELY

FOR: INHERENTLY LIGHT- AND HEAT-STABILIZED POLYAMIDES OF IMPROVED WETFASTNESS

Honorable Commissioner
for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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TC 1700

REQUEST FOR CONTINUED EXAMINATION
PRELIMINARY SUBMISSION

Sir:

This is a Request for Continued Examination pursuant to 37 C.F.R. §1.114 which is filed in response to the final Office action of December 04, 2002. For further prosecution, kindly enter and consider the following preliminary amendment and remarks:

PRELIMINARY AMENDMENT

IN THE CLAIMS:

Amend Claims 1 and 2 and enter new Claim 14 as indicated in the Listing of Claims set forth in Appendix I attached to this paper. A clean copy of the claims as herewith amended is found in the attached Appendix II.

PRELIMINARY AMENDMENT

Claims 1 to 9 and 11 to 14 as set forth in Appendix II of this paper are now pending in this case. Claims 1 and 2 have been amended, and Claim 14 has been added as indicated in Appendix I of this paper.

In addition to editorial changes in the claim language, applicants have amended Claim 1 to recite the definition of R^6 which was inadvertently omitted in the earlier amended versions of Claim 1. Additionally, applicants' have revised the definition of R^7 to recite the moiety $-(NH)-$ in accordance with the disclosure on page 6, indicated lines 31 to 36, of the application, and have introduced the requirement that the polymerization is allowed to proceed until the polyamide exhibits a degree of polymerization which renders the polyamide capable of forming fibers or films. The respective requirement is inherently disclosed for example on page 2, indicated lines 39 to 44, and on page 9, indicated lines 7 to 14, of the application.

New Claim 14 has been added to further bring out the embodiment of the process defined in Claim 1 wherein the hydrocarbon R^8 of the compound (I) bears groups R^7 selected from $-(NH)-$, $-(NHR^9)$ and carboxyl groups. No new matter has been added.

The Examiner has rejected Claims 1 to 9 and 11 to 13 under Section 112, ¶2, contending that applicants' reference to "carboxyl derivative groups" in the definition of R^7 renders the the claims indefinite.

On the one hand, the Examiner notes in this context that the textbook pages submitted by applicants "shows some carboxyl derivatives, but others, like salts, are missing". With regard to the omission of salts in the referenced enumeration it is respectfully submitted that generally organic chemistry does not distinguish between carboxylic acids on the one hand and salts thereof on the other hand where, as in the present case, reactions of the carboxyl group are concerned since the nature of the reactive group is influenced by the reaction medium rather than the fact whether the carboxyl compound is employed in form of the acid or the corresponding salt. The fact that salts are missing in the respective enumeration is, therefore, not deemed to render applicants' claims indefinite. On the other hand,

the Examiner has noted that it is not readily apparent how a nitrile group is converted into an amide. Applicants herewith enclose copies of a textbook addressing the so-called Ritter reaction¹⁾, ie. the reaction of a nitrile compound and an alcohol to form an amide. Accordingly, a person of ordinary skill in the pertinent art is well aware how to convert a nitrile into an amide.

The essential inquiry pertaining to the definiteness requirement of Section 112, ¶2, is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) the content of the particular application disclosure;
- (B) the teachings of the prior art; and
- (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made²⁾.

In light of the corroborating material presented by applicants it is urged that a person of ordinary skill in the pertinent art would consider the expression "carboxyl derivative groups" as reasonably clear so as to determine the subject matter defined by applicants' claims. Favorable reconsideration of the Examiner's rejection and withdrawal of the respective rejection is, therefore, solicited.

The Examiner has reiterated his position that the subject matter of applicants' claims is anticipated by the teaching of *Rody et al.* (US 4,234,700) pursuant to the provisions of Section 102(b), and is rendered prima facie obvious by the teaching of *Rody et al.* when taken in view of the disclosure of *Kimura et al.* (US 5,714,612) under the provisions of Section 103(a).

In response to applicants' earlier arguments and submissions on those issues the Examiner has taken the position that the page³⁾ of *Ullmann's* Encyclopedia fails to indicate that a molecular weight of 6100 or less is insufficient to convey fiber or film forming properties to the polyamide. It is respectfully submitted that the fact in

1) *March* "Advanced Organic Chemistry", 2nd Ed., McGraw-Hill 1977, pages 879-880

2) *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (CAFC 2000)

3) *Ullmann's* "Encyclopedia of Industrial Chemistry", 5th Ed., Vol. A10, page 456; submitted by applicants' along with the amendment dated October 24, 2002.

question is corroborated by page 182, Vol. A21, of *Ullmann's Encyclopedia*⁴⁾. The respective page provides⁵⁾ that a degree of polymerization⁶⁾ of 100, corresponding to a molecular weight of 11300, is at the low end of the useful average molecular weight (\bar{M}_n) values. Accordingly, a molecular weight of a polyamide of 6100 is not considered in the art as useful for the formation of fibers and films. To further corroborate this fact, applicants herewith enclose an extended copy of pages from *Ullmann's Encyclopedia*, Vol. A10, on fibers⁷⁾. The respective copy specifically addresses the requirements for fiber formation. Table 1 (page 455) sets forth a compilation of ranges of minimum average molecular weights and minimum degrees of polymerization which are necessary to render polyamides capable of forming fibers. Accordingly, to be fiber forming aliphatic polyamides are required which have a degree of polymerization of at least 380 corresponding to a molecular weight of 15000, and even higher degrees of polymerization are required for aromatic polyamides to be capable of forming fibers.

In this context it is also noted that *Rody et al.* disclose an explanation of what is meant by "relatively low molecular polymers". The Examiner will note that *Rody et al.* define the integer "n" for formulae (I) to (III) as "a value from 2 to about 50" (col. 3, indicated lines 24 to 43, of US 4,234,700). The integer "n" of *Rody et al.*'s formulae (I) to (III) is the number of repeating units in the "relatively low molecular polymers", or -in the terms used by *Ullmann's*- the degree of polymerization. In accordance with the broadest generic disclosure of *Rody et al.*, the "relatively low molecular polymers" therefore comprise at the most about 50 repeating units. A degree of polymerization of about 50 is, however, by far below the degree of polymerization of 100⁸⁾ which provides for polyamides at the low end of useful average molecular weights.

The Examiner has criticized that applicants' claims fail to recite a limitation of the molecular weight. Accordingly, applicants

4) *Ullmann's "Encyclopedia of Industrial Chemistry"*, 5th Ed., Vol. A21, page 182; submitted by applicants' along with the amendment dated January 28, 2001.

5) first column, paragraph following the representation of formula (4)

6) the number of repeating units in the polymer chain; for example first paragraph of Sect. 2.1 of *Ullmann's* page 182; also *Fried "Polymer Science and Technology"*, Prentice Hall PTP 1995, page 25, last paragraph, copy enclosed

7) pages 451 to 457, *Ullmann's "Encyclopedia of Industrial Chemistry"*, 5th Ed., Vol. A10, copy enclosed

8) *Ullmann's* Vol. A21, page 182

have revised the language of Claim 1 to emphasize the requirement that the polymerization is allowed to proceed until the polyamide exhibits a degree of polymerization which renders the polyamide capable of forming fibers or films. Since the degree of polymerization corresponds to the molecular weight, the Examiner's criticism is no longer applicable.

The Examiner has cited In re Pearson⁹⁾ which holds that counsel's statements cannot take the place of objective evidence. In In re Pearson the Court addressed a situation where the argument in question was unsupported by corroborating evidence. Applicants have submitted numerous copies of textbooks corroborating their statements. The situation in the present case is therefore not deemed to be sufficiently similar to render the Court's holding in In re Pearson pertinent.

Applicants apologize for failing to provide a more thorough explanation of the relevance of In re Dowdall¹⁰⁾. The respective case was cited for the Court's definition of a polymer which is found in footnote 2, ie. on page 356 of 137 USPQ.

In light of the foregoing and the attached, the subject matter defined in applicants' claims cannot reasonably be deemed as being anticipated by the teaching of **Rody et al.** Favorable reconsideration of the Examiner's position and withdrawal of the respective rejection is respectfully solicited.

It is further respectfully requested that the Examiner favorably reconsider the position that applicants' invention was prima facie obvious under the provisions of Section 103(a) from a combination of the teaching of **Rody et al.** and the disclosure of **Kimura et al.**

Both **Rody et al.** and **Kimura et al.** provide for compounds which can be used as stabilizers in a variety of polymers¹¹⁾. In each case, the stabilizing compounds are combined with the polymers by blending¹²⁾ from 0.01 to 1.0 or 5.0 wt-%¹³⁾ of the stabilizer with the polymer. Accordingly, **Rody et al.** and **Kimura et al.** disclose physical

9) 494 F.2d 1399, 181 USPQ 641 (CCPA 1974)

10) 315 F.2d 929, 137 USPQ 356 (CCPA 1963)

11) col. 1, indicated lines 10 to 14, of **US 4,234,700**, and col. 1, indicated lines 9 to 14, of **US 5,714,612**

12) col. 62, indicated lines 28 to 40, of **US 4,234,700**, and col. 9, indicated lines 42 to 51, of **US 5,714,612**

13) col. 62, indicated lines 31 to 32, of **US 4,234,700**, and col. 9, indicated lines 46 to 47, of **US 5,714,612**

mixtures of their stabilizers and the polymers, and nothing in either teaching suggests or implies a chemical modification of the polymer itself in accordance with applicants' invention. Although the prior art may be capable of being modified in the manner which is necessary to arrive at the claimed invention, the suggestion or motivation to make the requisite modification must be provided by the prior art in order to render the claimed invention obvious within the meaning of Section 103(a)¹⁴). Favorable reconsideration of the Examiner's position and withdrawal of the rejection of applicants' claims under Section 103(a) is, therefore, respectfully solicited.

REQUEST FOR EXTENSION OF TIME:

It is respectfully requested that a *three* month extension of time be granted in this case. A check for the \$930.00 fee is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF



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Encl.: THE LISTING OF CLAIMS (Appendix I)

THE AMENDED CLAIMS (Appendix II)

March "Advanced Organic Chemistry", 2nd Ed., McGraw-Hill 1977, pages 879-880

Fried "Polymer Science and Technology", Prentice Hall PTP 1995, page 25
Ullmann's "Encyclopedia of Industrial Chemistry", 5th Ed., Vol. A10, pages 451- 457

HBK/BAS

14) In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (CAFC 1990); see also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (CAFC 1992)